REMARKS

Favorable reconsideration of this application in the light of the amendments and the following discussion is respectfully requested. Claim 1 has been amended. Support for the amended claim is found on page 6 line 17 through page 7 line 7. Claims 1-7 remain pending in this application for consideration. Claims 8-15 have been withdrawn.

Election/Restrictions

Restriction to one of the following inventions was required under 35 U.S.C. 121:

I. Claims 1-7, drawn to an aqueous fluoropolymer dispersion with low or no fluorinated surfactant, classified in class 524, subclass 805.

II. Claims 8-15, drawn to a process of making aqueous fluoropolymer dispersion with low or no fluorinated surfactant, classified in class 526, subclass 242.

The Examiner asserted that the inventions are distinct, each from the other because Inventions II and I are related as process of using (or making) and product made. In the instant case, the Examiner stated that Group II is not limited to use or prepare aqueous fluoropolymer dispersion with low or no fluorinated surfactant as specified in Group I. The only requirement is that monomers are soluble in a mixture of medium and organic initiator as well as the components mixing in Group II need to be compatible, therefore the process of Group II does not always produce or use the composition useful in Group I. Additionally, the Examiner averred that the mixing in Group II could be made, for example, by premixing with step addition or continuous addition with or without help of some other co-solvent.

The Examiner indicated that restriction for examination purposes is proper because these inventions are distinct for the reasons given above and because the groups have acquired a separate status in the art as shown by their different classification.

During a telephone conference on May 19, 2004, the applicants' representative made a provisional election with traverse to prosecute the invention of Group I, claims 1-7. Applicants hereby affirm the election of Group I, claims 1-7 drawn to an aqueous fluoropolymer dispersion without traverse.

Claim Rejections Under 35 USC § 102

1. Claims 1-7 were rejected under 35 USC § 102(b) as being anticipated by McCarthy et al (U.S. Patent No. 5,955,556).

Regarding the limitation of parent Claim 1, the Examiner stated that McCarthy et al discloses the preparation of a stable aqueous self-dispersible fluoropolymer dispersion of up to 48% polymer solids in water in the absence of surfactant due to improved conversion rate of monomer to polymer. According to the Examiner, McCarthy et al further discloses during polymerization process, fluoropolymer macromolecules are produced having inorganic, "surfactant-like" functional end groups which impart excellent latex stability to the polymer even these end groups are present in very low concentration. The Examiner noted that the above-mentioned type end groups are ionic type and will be certainly solvated in water, therefore the dispersions made by McCarthy carry the claimed conductivity.

The Office Action further refers to some of the dependent claims as follows:

Regarding Claim 3, McCarthy et al discloses that various types of commercially available surfactants may optionally be pre-charged or batchwise added, and it includes non-ionic surfactants.

Regarding Claims 4-5, McCarthy et al discloses that suitable cationic surfactants such as the salts of fluorinated alkyl quaternary ammonium iodides can be included.

Regarding Claim 6, the self-dispersible dispersion made by McCarthy can be surfactant-free. However, surfactants mentioned in above-mentioned Claims 3-5 can be added in an amount from 50 ppm to 5,000 ppm or from 0.01% to 5%.

Regarding Claim 7, the polymer solids in dispersions can be up to 48% by weight.

The remaining Claim 2 is thereby rejected with the same reason as applied to the rejection of Claims 1 and 3-7.

2. Claims 1-2 and 6-7 were rejected under 35 U.S.C. 102(b) as being anticipated by Oxenrider et al (U.S. Patent No. 5,453,477).

Regarding the limitation of parent Claim 1, the Examiner averred that Oxenrider et al disclose preparation of stable aqueous fluoropolymer dispersion in the absence of soaps or surfactants due to improved wettability of polymer particles. According to the Examiner, Oxenrider et al further discloses the polymers are CTFE homopolymer and its copolymers. The amount of

polymer solids in dispersions disclosed in working examples is overlapping the claimed amount. The examiner noted that iron ion in 10-1000 ppm is presented in the above-mentioned preparation, it is ionic type and will be certainly solvated in water, therefore the dispersions made by Oxenrider carry the claimed conductivity.

The Office Action further refers to some of the dependent claims as follows:

Regarding Claim 6, the CTFE fluoropolymer dispersions made by Oxenrider are surfactant-free or soap-free.

The remaining Claims 2 and 7 are thereby rejected with the same reason as applied to the rejection of claims 1 and 6.

Applicants's Response to the Claim Rejections under 35 USC § 102

1. Applicants aver that claims 1-7 are patentable under 35 USC § 102(b) in view of McCarthy et al, U.S. Patent No. 5,955,556 (hereinafter "McCarthy").

The present invention, as defined in amended claim 1, relates to an aqueous fluoropolymer dispersion comprising a melt processible fluoropolymer that is not self-emulsifying. The melt procesable fluoropolymer is present in an amount of at least 25% by weight based on the weight of the aqueous fluoropolymer dispersion. The dispersion additionally has a fluorinated surfactant having a molecular weight of not more than 1000g/mol in an amount of not more than 100ppm based on the weight of fluoropolymer solids or being a free of the fluorinated surfactant. The aqueous fluoropolymer dispersion has a conductivity of at least 200 μS/cm. The amendment indicates that the present invention requires an emulsifier such as the fluorinated surfactants fully described page 6, line 17 through page 7, line 7 of the specification.

The Examiner has acknowledged that McCarthy discloses the preparation of a stable aqueous self-dispersible fluorinated copolymer dispersion of up to 48% polymer solids in water in the absence of surfactant due to improved conversion rate of monomer to polymer.

According to the MPEP, "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." See MPEP 2131 (quoting *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631) (emphasis added). Since the reference fails to describe an aqueous dispersion of melt-processable fluoropolymer that is not self emulsifying, such reference would not anticipate the present

invention. The remaining claims 2-7 all depend, either directly or indirectly, from claim 1. Thus, each of these claims is patentable at least on the basis of this dependency from a patentable base claim. Withdrawal of the rejection is respectfully requested.

2. Applicants aver that claims 1-2 and 6-7 are patentable under 35 U.S.C. 102(b) in view of Oxenrider et al, U.S. Patent No. 5,453,477 (hereinafter "Oxenrider").

Oxenrider, in contrast to the inventive aqueous fluoropolymer dispersion discovered by applicants and defined in claim 1, is directed to suspension polymerization. Oxenrider fails to describe any aqueous emulsion polymerization processes other than the cursory mention of emulsion polymerization as one prior art method of preparing fluoropolymers (see e.g., column 1, lines 43-49, "There are presently known a plurality of processes which were suitable for the formation of the homopolymer, polychlorotrifluoroethylene. High molecular weight homopolymers and copolymers of PCTFE may be prepared by free radical initiated polymerization either as bulk, suspension, or aqueous emulsion via the use of a suitable initiator system or in the alternative by ionizing radiation."). Emulsion polymerization, however, is distinguishable from suspension polymerization.

Since Oxenrider discloses only suspension polymerization and not emulsion polymerization, such reference would not anticipate the claims 1-2 ad 6-7 of the present invention. Additionally, Oxenrider also describes a dispersion made in the absence of surfactants. Applicants respectfully request withdrawal of the rejection under 35 USC § 102.

Claim Rejections Under 35 USC § 103

Claims 3-5 were rejected under 35 USC § 103(a) as being unpatentable over Oxenrider et al (U.S. Patent No. 5,453,477) in view of McCarthy et al (U.S. Patent No. 5,955,556).

Regarding the limitation of Claims 3-5 which are dependent from claim 1, the Examiner indicated that the discussion of the disclosure of the prior art of Oxenrider for Claims 1-2 and 6-7 of this Office Action is incorporated here by reference. The Examiner acknowledged that Oxenrider is silent about specifically using non-ionic surfactant for Claim 3 as well as water-soluble salt for Claims 4-5. Regarding the limitation of Claim 3, McCarthy et al teaches that various type of commercially available surfactants may optionally be pre-charged or batchwise

added, and it includes non-ionic surfactants. Regarding the limitations of Claims 4-5, the Examiner stated that McCarthy et al disclose that suitable cationic surfactants such as the salts of fluorinated alkyl quaternary ammonium iodides can be included. The Examiner noted that the advantage is such addition of conventional surfactants in the preparation of dispersions will effectively improve the stability of aqueous dispersion.

The Examiner concluded that one having ordinary skill in the art would have found it obvious to add commercially available conventional surfactants in the course of polymerization or post polymerization, specifically non-ionic surfactant and cationic surfactant, as taught by McCarthy with an advantage to obtain more stabilized aqueous fluoropolymer dispersions in an effective way.

Applicants's Response to the Claim Rejections Under 35 USC § 103

Applicants assert that the claims 3-5 are patentable under 35 USC § 103(a) Oxenrider in view of McCarthy. Applicants assert, for the reasons set forth above, that the noted claims are patentable over the cited references. Neither reference teaches, suggests or discloses an aqueous fluoropolymer dispersion containing a fluoropolymer that is not self-emulsifying. Thus even if combined, Oxenrider and McCarthy would not result in the present invention. Applicants respectfully request withdrawal of the rejection of claims 3-5.

Applicants acknowledge that the prior art made of record in the Office Action is pertinent to the present invention. However, the reference does not provide a basis for rejecting the claims of record.

Conclusion

In view of the foregoing remarks, favorable reconsideration of the present application and the passing of this case to issue with all claims allowed is courteously solicited.

Should the Examiner wish to discuss any aspect of this application, applicants' attorney suggests a telephone interview in order to expedite the prosecution of the application.

Respectfully submitted,

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Date

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